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ANTS AND THEIR WAYS

WITH ILLUSTRATIONS, AND AN APPENDIX GIVING A COMPLETE LIST OF GENERA AND SPECIES OF THE BRITISH ANTS

BY THE

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'A little people,' but 'exceeding wise.'—*Prov.* xxx. 24, 25
'Go to the ant' . . . . 'consider her ways and be wise.'—*Prov.* vi. 6

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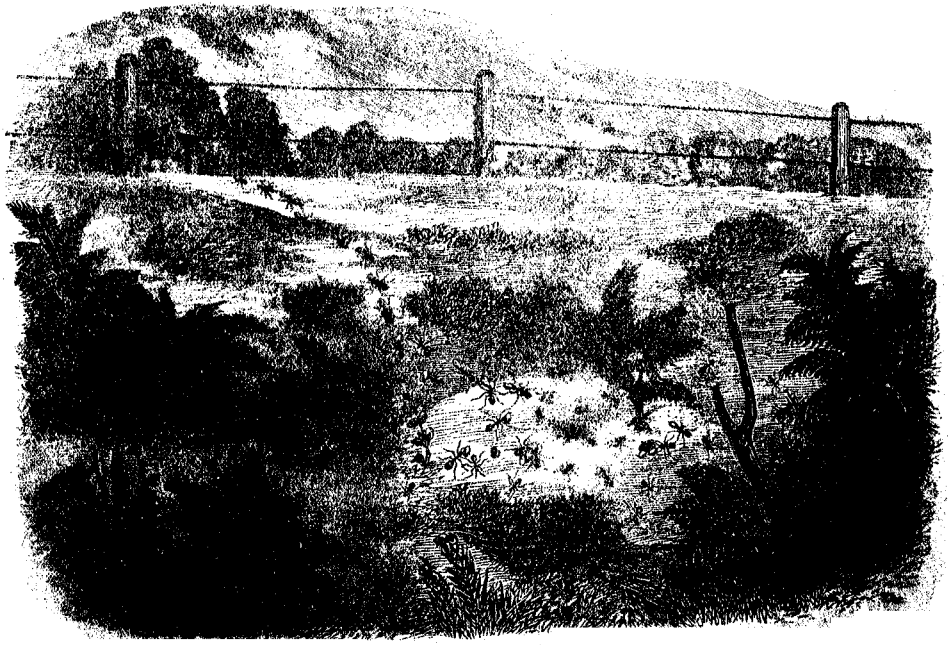

The slave-maker (*F. sanguinea*) attacking the nest of *F. fusca* on Shirley Common. (Page 175

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PREFACE TO SECOND EDITION

THE fact that a large first edition of *Ants and their Ways* has been exhausted is an encouraging evidence that its publication satisfied a widely-felt need. This new edition is issued with but few additions. I have been fortunate in the re-discovery, at Bournemouth, of the species first captured unwittingly by the son of the late Mr. Frederick Smith, the celebrated Hymenopterist, to which species I have given the name of *Formica glabra*. After many a careful search, during frequent visits to that charming watering-place, which may be fairly designated the metropolis of the ant-world, I was rewarded in 1892, and again in 1893, by noticing, in the sunshine on the heather and the gorse, several workers, and, in 1892 for the first time, the queen, with a body-guard of her faithful subjects, taking a constitutional. I was thus able to make acquaintance with this brilliant species in its home. Since the publication of the first edition, I have, in company with the Rev. Canon Fowler, who kindly acted as my guide, met with several extensive colonies of the very rare species *Diplorhoptrum fugax*, near Sandown, in the Isle of Wight, and was made happy in witnessing the harvesting instinct in the delicately

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sculptured species, *Tetramorium cæspitum*, at Branscombe, on the Devonshire coast. The diligent workers, I noticed, filing into their nest with grass-seeds in their mandibles; and in disturbing their habitation I found many seeds scattered among the *débris* of what I took to be their granary. I should add that the late Rev. J. Traherne Moggridge says in his attractive work on *Harvesting Ants and Trap-door Spiders*, that this species has been observed at Mentone and Cannes occasionally collecting and carrying in seeds. The instance I have given is, I believe, the first of the harvesting instinct having been witnessed in our own country.

The present work owes its origin to a series of papers which I was requested to prepare for the *Leisure Hour*, and which appeared during the year 1880. Since that date additional material illustrating the marvellous history of the 'little people' has accumulated through the researches of Sir John Lubbock,[1] Dr. McCook of Philadelphia, myself, and others. Dr. McCook has published two volumes, one which appeared in 1880, constituting a monograph of the habits, architecture, and structure of *Pogonomyrmex barbatus*, the agricultural ant of Texas; and the other, in 1882, giving the remarkable history of the honey ants of the Garden of the Gods, and also of the occident ants of the American plains. I would also call the reader's attention to the *Synopsis of British Heterogyna and Fossorial Hymenoptera*, by Edward Saunders, Treasurer of the

[1] Sir John Lubbock has gathered together his papers on the subject, and has published them, with additional matter bearing on the social Hymenoptera, under the title *Ants, Bees, and Wasps*, as one of the International Scientific Series.

Entomological Society, reprinted from the *Transactions* of the Society for December, 1880—a valuable contribution to the study of the British species. In this work he adopts a specific characteristic for the female of *Formica aliena* which I had brought forward in one of my papers, and which had been recognised as distinctive of the species by my late friend, Mr. Frederick Smith of the British Museum, formerly President of the Entomological Society, an eminent Hymenopterist, to whose unwearied kindness and invaluable assistance I shall ever remain indebted. He, some twenty years ago, first stimulated my interest in the study of British ants into active exercise, and ever encouraged and aided me in my pleasant and profitable investigations, until his much lamented death in January, 1879. I have since secured possession of the greater part of his valuable collection of foreign *Aculeate Hymenoptera*, in which is numbered about six hundred different species of ants from almost every part of the world, as well as nearly two hundred and seventy species of the allied families *Mutillidæ* and *Thynnidæ*, popularly called Solitary Ants, and classed by Mr. F. Smith under the *Heterogyna*. Mr. Smith's manuscript lectures, with their practical and pictorial illustrations, have tended also to enrich my happy experiences of the wonders of the formic world.

I have been thus explicit in directing the attention of the reader to these sources of new entomological wealth, that he may be prepared to find in the present publication, not merely a reprint of my former papers, but rather the outline of an old picture filled in with fresh lights and shadows.

The author desires to place on record his appreciation of the value of the illustrations which so enhance the interest of his work, and which with but few exceptions were engraved from the well-executed drawings of his wife: these exceptions being Fig. 34, in preparing which she availed herself of a skilful sketch by Miss E. E. White, and Figs. 39–43, which were taken from original diagrams by the late Mr. F. Smith.

If the reader can glean from the perusal of this imperfect attempt to give form and colouring to one of the most marvellous provinces of the wondrous empire of the King of Glory, some portion of the untold pleasure it has brought to my own mind in making it, I shall be more than satisfied, especially should the perusal lead to a more emphatic and practical recognition of the truth of the inspired declaration —'The works of the Lord are great, sought out of all them that have pleasure therein.'

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ANTS AND THEIR WAYS

'A LITTLE PEOPLE,' BUT 'EXCEEDING WISE'

CHAPTER I.

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An entrancing charm undoubtedly clings to the marvellous history of ants, most appositely designated by the inspired naturalist as 'a little people,' but 'exceeding wise.' From the time of Solomon to the present the movements and economy of this Lilliputian race have awakened in the observant mind feelings of the deepest interest, well-merited respect, and unfeigned astonishment. Whether it be in the record of revealed truth, in the chronicles of heathen mythology, in the pages of historians, in the songs of poets, in the enchanted ground of elf-land, amid the graphic records of travellers' experiences, in the letterpress of the British essayists, between the attractive covers of serials and periodicals, in the columns of newspapers, in the archives of governments, in the popular literature on natural history, in the more systematic registration of the wonders of natural science, and in the faithful observation and patient